

TK-K-1st Grade Math for the 21st Century: CCSS in Practice

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MaTHink Conference
March 30, 2013

Agenda

- ✦ Welcome/Training Objective
- ✦ Common Core State Standards in Mathematics
 - ✦ Major Shifts
 - ✦ Standards for Mathematical Practice
 - ✦ Content Standards
- ✦ Classroom Instructional Practice:
 - ✦ 21st Century Routines
 - ✦ Math Tools
 - ✦ Two-Colored Counters
- ✦ Closure

Training Objective

- ✦ To provide TK-1st grade teachers with information and instructional tools to begin the journey towards implementation of Common Core State Standards in Mathematics



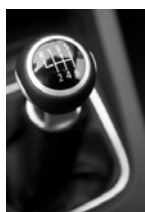
Common Core State Standards in Mathematics

- ✦ Transitioning to CCSS
- ✦ Major Shifts in Mathematics
- ✦ Two Types of Standards
 - ✦ Standards for Mathematical Practice
 - ✦ Content Standards

Major Shifts in Mathematics

Content and Pedagogical Issues

- ✦ Focus
- ✦ Coherence
- ✦ Rigor



Standards for Mathematical Practice

Mathematically proficient students....

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

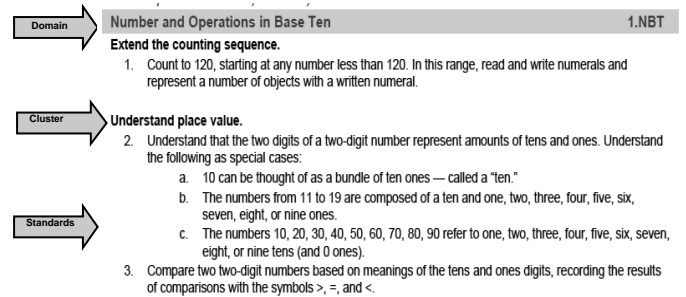


TK-K-1st Grade

CCSS Content Standard Domains

- ✦ Counting and Cardinality (TK and K only)
- ✦ Operations and Algebraic Thinking
- ✦ Number and Operations in Base Ten
- ✦ Measurement and Data
- ✦ Geometry

Math Content Standards



Math Content Standards

- Build solid conceptual understanding
- Develop procedural skill and fluency
- Relate mathematics to problem solving situations



CCSS Resources



California Department of Education website:
www.cde.ca.gov/re/cc/

Participant Processing

- ✦ What are some insights and/or “ah-has” you have about CCSS?

Instructional Practice

Question: How do I adjust my instruction to address the demands of CCSS?

✦ Math CCSS **requires** instructional shifts to address the demands of focus, coherence and rigor.

- ✦ Shifts in curricular materials
- ✦ Shifts in lesson design and time spent on topics
- ✦ This will require the skills of true differentiation.

Instructional Time Focus

In Kindergarten, instructional time should focus on two critical areas: (1) representing and comparing whole numbers, initially with sets of objects; (2) describing shapes and space. More learning time in Kindergarten should be devoted to number than to other topics.

In Grade 1, instructional time should focus on four critical areas: (1) developing understanding of addition, subtraction, and strategies for addition and subtraction within 20; (2) developing understanding of whole number relationships and place value, including grouping in tens and ones; (3) developing understanding of linear measurement and measuring lengths as iterating length units; and (4) reasoning about attributes of, and composing and decomposing geometric shapes.

Source: www.commoncorestandards.org

21st Century Math Routines

Discussion Points:

- ✦ Use of Instructional Time in Mathematics
- ✦ Building Mathematical Fluency with Young Children
- ✦ Subitizing

21st Century Math Routine

Classroom Video Example

- ✦ Part 1: Teacher Directions
- ✦ Part 2: Teacher Questioning
- ✦ Part 3: Student Response
- ✦ Other Considerations

Match to the Standards

- ✦ Which Standards for Mathematical Practice are addressed in the 21st Century Math Routine?
- ✦ Which Kindergarten content standards are addressed or supported in 21st Century Math Routine?

Participant Processing

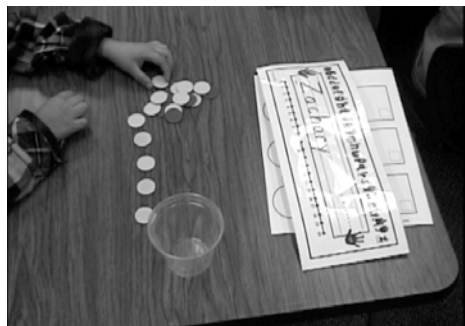
- ✦ How will 21st Century Routines benefit student learning in number skills?
- ✦ What are some further applications for your own classroom practice?

Classroom Instructional Practice

Instructional Shifts within Content Standards to...

- ✦ Build solid conceptual understanding
- ✦ Develop procedural skill and fluency
- ✦ Relate mathematics to problem solving situations

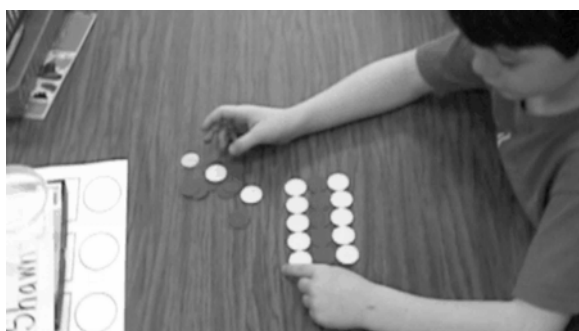
Two-Colored Counters



Careful Counting



Five and Ten frame Structures



Decomposing Quantities



Pictorial Representation



Recording Quantities: Beginning Operations



Summary of Instructional Components

- Careful counting and cardinality
- Five frame and ten frame structures
- Decomposing and Composing
- Record with pictorial representations
- Recording Quantities leading to Operations--meaning of addition and subtraction

Equals Common Core Success!!

Match to the Standards

- ✦ Which content standards (TK-K or 1st) are addressed in these video clips?
- ✦ Were any Standards for Mathematical Practice addressed?

Promises to Our Children

“These Standards are not intended to be new names for old ways of doing business. They are a call to take the next step. It is time for states to work together to build on lessons learned from two decades of standards based reforms. It is time to recognize that standards are not just promises to our children, but promises we intend to keep.”

— CCSS (2010, p.5)

Closure

Remember, we are on the CCSS journey together...thank you for your attendance and kind attention!!

